

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, Governor

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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June 19, 1992

Mr. Rich Vaille, Chief
State Programs Branch
U.S. Environmental Protection Agency
Region IX
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Dear Mr. Vaille:

LEAD CONTAMINATION AT SHOOTING RANGES

INTRODUCTION

Members of the Department of Toxic Substances Control (Department) recently met with Mr. Fred Wooldridge of Hardcast Enterprises and his attorney, Mr. Michael Francis of Demetriou, Del Guercio and Lovejoy, concerning the regulatory status of shooting range maintenance. This meeting was held as a result of a letter sent to Secretary James M. Strock of the California Environmental Protection Agency (Cal/EPA) from Mr. Robert Strub of the Damon Corporation and a letter sent to Mr. William F. Soo Hoo, Director of the Department, from Mr. Fred Wooldridge of Hardcast Enterprises. These companies have recently merged and are involved in the business of maintaining shooting range backstop sand and recovering lead from the spent bullets.

The Department has also received several inquiries about this issue from public and private shooting range operators, the military and local regulatory agencies. The Department is addressing this issue with the utmost urgency in order to determine the proper regulatory requirements regarding maintenance at indoor and outdoor shooting ranges.

There are a substantial number of law enforcement, military and private shooting ranges in California. Law enforcement and military personnel are required to conduct target practice on a regular basis in order to maintain their shooting skills. Shooting ranges must be maintained on a regular basis to prevent overloading of lead in backstop sand at outdoor ranges and excessive accumulation of lead pieces and powder at indoor ranges. Excessive buildup of lead fragments in backstop sand can lead to potential ricochet hazards.

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OUTDOOR SHOOTING RANGES

Typically, berms comprised of sand or soil are erected at the far end of a range. Rounds are fired at targets placed in front of these berms. Eventually, the sand becomes so contaminated with lead that a ricochet problem becomes imminent. It is at this point that the range operator must take action to make the range usable again, either by removing the lead from the sand or in some cases, adding more sand to the top of the berm. The amount of lead in the sand when the range must undergo this maintenance can range from 20 to 70 percent lead by volume, according to Mr. Wooldridge.

In the past, the larger pieces of lead generated from shooting bullets into the berms were removed from the sand by screening. Mr. Wooldridge claims that this method removes only about half of the total amount of lead present. This screened sand, which still contains a large amount of lead, is then placed back on the ground for reuse in capturing bullets. Hardcast Enterprises has developed a hydrosluicing method of lead removal similar to that used in gold mining. They claim that the hydrosluicing is able to remove 99 percent by volume of the lead from the sand. Fine lead particles are centrifuged out and given to the range operator to be manifested as hazardous waste. After being cleaned, the sand, wet from the hydrosluicing operation, is formed again into a berm. The larger lead particles are taken offsite by Hardcast Enterprises to be melted and made into new bullets.

We understand, however, that even in removing 99 percent of the lead, the remaining "clean" sand would contain a concentration of lead that when tested, would fail the Toxicity Characteristic Leaching Procedure (TCLP), as well as California's Total Threshold Limit Concentration (TTLC).

The Department is concerned that Hardcast Enterprises' operation, as well as similar operations undertaken by individual shooting range operators, may be Resource Conservation and Recovery Act (RCRA) regulated. Specifically, we would like you to address the following questions:

- 1) Would "used" backstop sand, containing bullets, bullet fragments and lead powder, be considered a RCRA regulated hazardous waste, if it can no longer be used as backstop sand without first being "cleaned" or being covered with additional sand?

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- 2) If the "used" backstop sand is a RCRA hazardous waste, would the act of "cleaning" the sand by screening, sieving, or hydrosluicing for the purpose of removing the bullets and bullet fragments from the backstop sand and the fine lead powder at the range site, constitute onsite treatment requiring a RCRA permit of either the owner or operator (contractor)? Would any of these activities be considered routine maintenance of a shooting range?
- 3) Would covering the "used" (i.e., not "cleaned"), backstop sand in place with fresh sand constitute onsite disposal of a RCRA hazardous waste if the "used" sand fails the TCLP for lead?
- 4) Would returning the "cleaned" sand, if the "cleaned" sand failed the TCLP for lead, to the backstop berm be viewed as "use constituting disposal?" If so, would placing an impermeable material such as Visquene or plastic on the ground before adding the "cleaned" sand eliminate this designation by preventing contact between the sand and the ground?
- 5) Are there any federal hazardous waste statutory or regulatory exemptions or exclusions that would apply to the onsite recycling and use of backstop sand (i.e., the removal of "used" backstop sand from the land, the "cleaning" of the sand onsite, and the replacement of the "cleaned" sand on the ground for reuse as a backstop)?

INDOOR RANGES

Most indoor ranges in California have metal deflectors at the end of the firing range instead of backstops of sand (or soil) that capture the rounds. When the bullets impact the metal deflectors, lead powder results. The bullet and powder mixture remains at the end of the range until the operator decides that due to the increase in the volume of lead powder, cleaning is necessary. In one instance, the operator could separate the lead powder from the larger fragments of bullets before a contractor such as Hardcast Enterprises arrives. In this case, the powder is manifested offsite as hazardous waste, and the bullets are removed by Hardcast Enterprises for melting. It is possible that some range owners dispose of both bullets and powder as nonregulated solid waste. In addition, Hardcast Enterprises has developed an air vacuum method for separating the lead powder

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from the larger fragments of bullets. Hardcast Enterprises then gives the lead powder to the range owner for manifesting and again, removes the larger fragments for melting.

We would like to ask the following questions regarding indoor ranges:

- 1) At what point, if ever, would the bullet fragments and lead powder become subject to regulation as a hazardous waste? When they are collected from the range? When the range operator decides to separate the large bullet fragments from the lead powder? When the range operator decides to dispose of the fragments and powder in the trash? Or when the range is being closed for use as a range and the property is to be sold, developed, etc.?
- 2) Would the act of separating the large bullet fragments from the lead powder, either by screening or using an air vacuum system onsite, be considered hazardous waste treatment that would require a RCRA permit?
- 3) If the bullet fragments are recycled offsite by being melted and recast into new bullets, is there any federal hazardous waste statutory or regulatory exemption or exclusion that would apply to the onsite separation of the bullet fragments if a RCRA permit would otherwise have been required?

RECOMMENDED COURSE OF ACTION

The Department recommends that the separation of lead fragments from lead powder at indoor ranges be viewed as normal range maintenance and therefore not considered to be a hazardous waste. The lead powder should be manifested offsite as a hazardous waste and the lead fragments should be allowed to be melted as scrap metal. All necessary health and safety requirements mandated by CAL-OSHA should be observed by the workers during these maintenance activities. At outdoor ranges, the Department recommends that the separation activity, whether it be screening or hydrosluicing, again be viewed as normal range maintenance and therefore not considered to be a hazardous waste. Any lead powder generated should be manifested as hazardous waste with the lead fragments allowed to be sent for melting as scrap metal. Sand intended for placement back on the berm should be placed on an impermeable layer of Visquene or plastic to prevent contact between the soil and the sand. By preventing contact with soil, we do not view the placement of sand as "use

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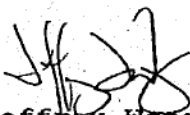
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constituting disposal." When a range ceases to operate as a range and closes, we believe the lead contamination issue should be addressed to protect human health and the environment.

The Department respectfully requests from U.S. EPA at this time, a written determination as to whether the activities outlined above would be federally regulated. Conflicting interpretations have been given in the past regarding this subject. It is only with a written interpretation that the Department can go forward with State regulatory decisions regarding these activities.

If you have any questions or would like to meet with members of my staff to further discuss this issue, please contact Ms. Diana Peebler of my staff at (916) 324-0273. Thank you for your prompt attention to this matter.

Sincerely,



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